Question 1

What does a client do when it has UDP datagrams to send?

- **It just sends the datagrams.**
- It queries the server to see if it is ready to receive data.
- It sends a simplified three-way handshake to the server.
- It sends to the server a segment with the SYN flag set to synchronize the conversation.

Explanation: When a client has UDP datagrams to send, it just sends the datagrams.

Question 2

What information is used by TCP to reassemble and reorder received segments?

- port numbers
- **sequence numbers**
- acknowledgment numbers
- fragment numbers

Explanation: At the transport layer, TCP uses the sequence numbers in the header of each TCP segment to reassemble the segments into the correct order.

Question 3

In what two situations would UDP be better than TCP as the preferred transport protocol? (Choose two.)

- when applications need to guarantee that a packet arrives intact, in sequence, and unduplicated
- **when a faster delivery mechanism is needed**
- when delivery overhead is not an issue
- **when applications do not need to guarantee delivery of the data**
- when destination port numbers are dynamic

Explanation: UDP is a very simple transport layer protocol that does not guarantee delivery. Devices on both ends of the conversation are not required to keep track of the conversation. UDP is used as the

transport protocol for applications that need a speedy, best-effort delivery.

Question 4

A client application needs to terminate a TCP communication session with a server. Place the termination process steps in the order that they will occur. (Not all options are used.)

Place the options in the following order:

step 1	client sends FIN
step 2	server sends ACK
step 3	server sends FIN
step 4	client sends ACK

Question 5

Which three fields are used in a UDP segment header? (Choose three.)

- Window Size
- **Length**
- **Source Port**
- Acknowledgment Number
- **Checksum**
- Sequence Number

Explanation: A UDP header consists of only the Source Port, Destination Port, Length, and Checksum fields. Sequence Number, Acknowledgment Number, and Window Size are TCP header fields.

Question 6

What are two roles of the transport layer in data communication on a network? (Choose two.)

- **identifying the proper application for each communication stream**
- **tracking the individual communication between applications on the source and destination hosts**

- providing frame delimiting to identify bits making up a frame
- performing a cyclic redundancy check on the frame for errors
- providing the interface between applications and the underlying network over which messages are transmitted

Explanation: The transport layer has several responsibilities. The primary responsibilities include the following:

- Tracking the individual communication streams between applications on the source and destination hosts
- Segmenting data at the source and reassembling the data at the destination
- Identifying the proper application for each communication stream through the use of port numbers

Question 7

What important information is added to the TCP/IP transport layer header to ensure communication and connectivity with a remote network device?

- timing and synchronization
- **destination and source port numbers**
- destination and source physical addresses
- destination and source logical network addresses

Explanation: The destination and source port numbers are used to identify exactly which protocol and process is requesting or responding to a request.

Question 8

Which two characteristics are associated with UDP sessions? (Choose two.)

- **Destination devices receive traffic with minimal delay.**
- Transmitted data segments are tracked.
- Destination devices reassemble messages and pass them to an application.
- **Received data is unacknowledged.**
- Unacknowledged data packets are retransmitted.

Explanation:

TCP:

- Provides tracking of transmitted data segments

- Destination devices will acknowledge received data.
- Source devices will retransmit unacknowledged data.

UDP

- Destination devices will not acknowledge received data
- Headers use very little overhead and cause minimal delay.

Question 9

How are port numbers used in the TCP/IP encapsulation process?

- Source port numbers and destination port numbers are not necessary when UDP is the transport layer protocol being used for the communication.
- Source port and destination port numbers are randomly generated.
- **If multiple conversations occur that are using the same service, the source port number is used to track the separate conversations.**
- Destination port numbers are assigned automatically and cannot be changed.

Explanation: Both UDP and TCP use port numbers to provide a unique identifier for each conversation. Source port numbers are randomly generated and are used to track different conversations. Destination port numbers identify specific services by using either a default port number for the service or a port number that is assigned manually by a system administrator.

Question 10

Which three statements characterize UDP? (Choose three.)

- **UDP provides basic connectionless transport layer functions.**
- UDP provides connection-oriented, fast transport of data at Layer 3.
- **UDP relies on application layer protocols for error detection.**
- **UDP is a low overhead protocol that does not provide sequencing or flow control mechanisms.**
- UDP relies on IP for error detection and recovery.
- UDP provides sophisticated flow control mechanisms.

Explanation: UDP is a simple protocol that provides the basic transport layer functions. It has much lower overhead than TCP because it is not connection-oriented and does not offer the sophisticated retransmission, sequencing, and flow control mechanisms that provide reliability.

Question 11

Which two fields are included in the TCP header but not in the UDP header? (Choose two.)

- **window**
- checksum
- source port
- destination port
- **sequence number**

Explanation: The sequence number and window fields are included in the TCP header but not in the UDP header.

Question 12

What are three responsibilities of the transport layer? (Choose three.)

- **identifying the applications and services on the client and server that should handle transmitted data**
- conducting error detection of the contents in frames
- **meeting the reliability requirements of applications, if any**
- directing packets towards the destination network
- formatting data into a compatible form for receipt by the destination devices
- **multiplexing multiple communication streams from many users or applications on the same network**

Explanation: The transport layer has several responsibilities. Some of the primary responsibilities include the following:
Tracking the individual communication streams between applications on the source and destination hosts
Segmenting data at the source and reassembling the data at the destination
Identifying the proper application for each communication stream through the use of port numbers

Multiplexing the communications of multiple users or applications over a single network
Managing the reliability requirements of applications

Question 13

Which flag in the TCP header is used in response to a received FIN in order to terminate connectivity between two network devices?

- FIN
- **ACK**
- SYN
- RST

Explanation: In a TCP session, when a device has no more data to send, it will send a segment with the FIN flag set. The connected device that receives the segment will respond with an ACK to acknowledge that segment. The device that sent the ACK will then send a FIN message to close the connection it has with the other device. The sending of the FIN should be followed with the receipt of an ACK from the other device.

Question 14

What is a characteristic of UDP?

- UDP datagrams take the same path and arrive in the correct order at the destination.
- Applications that use UDP are always considered unreliable.
- **UDP reassembles the received datagrams in the order they were received.**
- UDP only passes data to the network when the destination is ready to receive the data.

Explanation: UDP has no way to reorder the datagrams into their transmission order, so UDP simply reassembles the data in the order it was received and forwards it to the application.

Question 15

Which three statements describe a DHCP Discover message? (Choose three.)

- The source MAC address is 48 ones (FF-FF-FF-FF-FF-FF).
- **The destination IP address is 255.255.255.255.**
- The message comes from a server offering an IP address.
- **The message comes from a client seeking an IP address.**
- **All hosts receive the message, but only a DHCP server replies.**
- Only the DHCP server receives the message.

Explanation: When a host configured to use DHCP powers up on a network it sends a DHCPDISCOVER message. FF-FF-FF-FF-FF-FF is the L2 broadcast address. A DHCP server replies with a unicast DHCPOFFER message back to the host.

Question 16

Which application layer protocol uses message types such as GET, PUT, and POST?

- DNS
- DHCP
- SMTP
- **HTTP**
- POP3

Explanation: The GET command is a client request for data from a web server. A PUT command uploads resources and content, such as images, to a web server. A POST command uploads data files to a web server.

Question 17

Which protocol is used by a client to communicate securely with a web server?

- SMTP
- SMB
- IMAP
- **HTTPS**

Explanation: HTTPS is a secure form of HTTP used to access web content hosted by a web server.

Question 18

Which networking model is being used when an author uploads one chapter document to a file server of a book publisher?

- peer-to-peer
- master-slave
- **client/server**
- point-to-point

Explanation: In the client/server network model, a network device assumes the role of server in order to provide a particular service such as file transfer and storage. In the client/server network model, a dedicated server does not have to be used, but if one is present, the network model being used is the client/server model. In contrast, a peer-to-peer network does not have a dedicated server.

Question 19

Which layer in the TCP/IP model is used for formatting, compressing, and encrypting data?

- internetwork
- session
- presentation
- **application**
- network access

Explanation: The application layer of the TCP/IP model performs the functions of three layers of the OSI model – application, presentation, and session. The application layer of the TCP/IP model is the layer that provides the interface between the applications, is responsible for formatting, compressing, and encrypting data, and is used to create and maintain dialogs between source and destination applications.

Question 20

Which applications or services allow hosts to act as client and server at the same time?

- client/server applications
- email applications

- **P2P applications**
- authentication services

Question 21

Which two protocols may devices use in the application process that sends email? (Choose two.)

- HTTP
- **SMTP**
- POP
- IMAP
- **DNS**
- POP3

Explanation: POP, POP3, and IMAP are protocols that are used to retrieve email from servers. SMTP is the default protocol that is used to send email. DNS may be used by the sender email server to find the address of the destination email server. HTTP is a protocol for send and receiving web pages.

Question 22

A manufacturing company subscribes to certain hosted services from their ISP. The services required include hosted world wide web, file transfer, and e-mail. Which protocols represent these three key applications? (Choose three.)

- **FTP**
- **HTTP**
- DNS
- SNMP
- DHCP
- **SMTP**

Question 23

Which OSI layer provides the interface between the applications used to communicate and the underlying network over which messages are transmitted?

- **application**
- presentation

- session
- transport

Explanation: The application layer is the layer that is closest to the end user and provides the interface between the underlying network and the applications used to communicate.

Question 24

What is an advantage of SMB over FTP?

- Only with SMB can data transfers occur in both directions.
- Only SMB establishes two simultaneous connections with the client, making the data transfer faster.
- SMB is more reliable than FTP because SMB uses TCP and FTP uses UDP.
- **SMB clients can establish a long-term connection to the server.**

Explanation: SMB and FTP are client/server protocols that are used for file transfer. SMB allows the connecting device to access resources as if they were on the local client device. SMB and FTP use the TCP protocol for connection establishment and they can transfer data in both directions. FTP requires two connections between the client and the server, one for commands and replies, the other for the actual file transfer.

Question 25

What do the client/server and peer-to-peer network models have in common?

- Both models have dedicated servers.
- **Both models support devices in server and client roles.**
- Both models require the use of TCP/IP-based protocols.
- Both models are used only in the wired network environment.

Explanation: In both the client/server and peer-to-peer network models, clients and servers exist. In peer-to-peer networks, no dedicated server exists, but a device can assume the server role to provide information to a device serving in the client role.

Question 26

What type of information is contained in a DNS MX record?

- the FQDN of the alias used to identify a service
- the IP address for an FQDN entry
- **the domain name mapped to mail exchange servers**
- the IP address of an authoritative name server

Explanation: MX, or mail exchange messages, are used to map a domain name to several mail exchange servers that all belong to the same domain.

Question 27

In what networking model would eDonkey, eMule, BitTorrent, Bitcoin, and LionShare be used?

- **peer-to-peer**
- client-based
- master-slave
- point-to-point

Explanation: In a peer-to-peer networking model, data is exchanged between two network devices without the use of a dedicated server. Peer-to-peer applications such as Shareaz, eDonkey, and Bitcoin allow one network device to assume the role of server, while one or more other network devices assume the role of client using the peer-to-peer application.

Question 28

What is a key characteristic of the peer-to-peer networking model?

- wireless networking
- social networking without the Internet
- network printing using a print server
- **resource sharing without a dedicated server**

Explanation: The peer-to-peer (P2P) networking model allows data, printer, and resource sharing without a dedicated server.

Question 29

Which scenario describes a function provided by the transport layer?

- A student is using a classroom VoIP phone to call home. The unique identifier burned into the phone is a transport layer address used to contact another network device on the same network.
- A student is playing a short web-based movie with sound. The movie and sound are encoded within the transport layer header.
- **A student has two web browser windows open in order to access two web sites. The transport layer ensures the correct web page is delivered to the correct browser window.**
- A corporate worker is accessing a web server located on a corporate network. The transport layer formats the screen so the web page appears properly no matter what device is being used to view the web site.

Explanation: The source and destination port numbers are used to identify the correct application and window within that application.

Question 30

Which three layers of the OSI model provide similar network services to those provided by the application layer of the TCP/IP model? (Choose three.)

- physical layer
- **session layer**
- transport layer
- **application layer**
- **presentation layer**
- data link layer

Explanation: The three upper layers of the OSI model, the session, presentation, and application layers, provide application services similar to those provided by the TCP/IP model application layer. Lower layers of the OSI model are more concerned with data flow.

Question 31

A PC that is communicating with a web server has a TCP window size of 6,000 bytes when sending data and a packet size of 1,500 bytes. Which byte of information will the web server acknowledge after it has received four packets of data from the PC?

- **6001**
- 3001
- 3000
- 1500

Question 32

A client creates a packet to send to a server. The client is requesting HTTP service. What number will be used as the destination port number in the sending packet?

- **80**
- 67
- 53
- 69

100%

You have scored **100%**.

Congratulations, you have passed the exam.

You have used 1 of 1 attempt(s).

Review Assessment

Here is how you performed in each of the Learning Objectives and Skills associated with this assessment.

Network Basics. Protocols. Transport Layer
100%
Network Basics. Protocols. Application Layer
100%